

DESCRIPTIONS OF AND NOTES ON SOME AUSTRALIAN
AND TASMANIAN FISHES.

By EDGAR R. WAITE, F.L.S., Zoologist.

(Plates xxxiv.-xxxvi.).

In October 1905 I spent three weeks in Melbourne and vicinity, and devoted some time to collecting fishes. In this connection I have to acknowledge the kindness of the Victorian Railway Commissioners in granting me concessions over all their lines traversed. I also desire to thank Mr. C. W. Maclean, Chief Inspector of Fisheries, for much personal assistance, and permission for the use of nets in closed waters, poisons, and other methods employed in my investigations. I paid almost daily visits to the Melbourne Fish Markets and also collected on the coast, principally at Queenscliff, where I received every attention and assistance from Inspector Brady. While in Melbourne I met Mr. Joseph Gabriel, who is interested in Mollusca, and he has since kindly sent to the Trustees some small fishes, taken by means of the dredge.

In consequence of leaving Australia for New Zealand I have been unable to deal with all the fishes obtained, and have indeed devoted attention to comparatively few species. A few fishes from N. S. Wales and Tasmania are also included.

The new species are :—

* ¹*Diplocrepis parvipinnis*, N. S. Wales.

* *Ophioclinus gabrieli*, Victoria.

* „ *gracilis*, N. S. Wales.

The following known species, not being included in Mr. A. H. S. Lucas' "Census" of 1890,² are regarded as additions to the Victorian fauna.

Stolephorus robustus, Ogilby,

* *Cheilobranchius rufus*, Macleay,

* *Crepidogaster spatula*, Günther,

Diplocrepis costatus, Ogilby.

¹ The species marked * are figured, the drawings being made by Mr. A. R. McCulloch.

² Lucas—Proc. Roy. Soc. Viet., (2), ii., 1890, p. 15, *et seq.*

Some species, not recognised in Victoria since first described, were retaken, and their claims to inclusion in the fauna (upon which doubt had been cast), fully established. The Melbourne Sole described as *Rhombosolea basseusis*, Castlenau, is now placed in the genus *Peltorhamphus*. The name *Scleropteryx* is used generically for *Ophioclinus derivi*, Ogilby.

Additional species redescribed or furnishing material for some remark are :—

Gobius mucosus, Günther, S. Australia, Victoria,
N. S. Wales.

* *Diplocrepis cardinalis*, Ramsay, Tasmania,

* *Rhombosolea flesoides*, Günther, Victoria,

* *Blennius tasmanianus*, Richardson, Tasmania, Vic-
toria, N. S. Wales.

STOLEPHORUS, *Lacépède*, 1803.

STOLEPHORUS ROBUSTUS, *Ogilby*, sp.

Spratelloides robustus, Ogilby, Proc. Linn. Soc. N. S. Wales, xxii.
1897, p. 64.

This small Herring has not been previously recorded from Victorian waters. I obtained several examples from Queenscliff and it is probable that many more would have been secured if a smaller meshed net had been used.

These southern examples have all the habit of *S. delicatulus*, Bennett, being of slender body, unlike typical examples of *S. robustus*. The specimens collected have had most of their scales rubbed off in transit, but as far as can be ascertained these are smaller and more numerous than in *S. delicatulus*, which feature provides the readiest means of determination, if indeed the species be distinct.

CHEILOBRANCHUS, *Richardson*, 1845.

CHEILOBRANCHUS RUFUS, *Macleay*.

(Plate xxxvi., fig. 1).

Chilobranchus rufus, Macleay, Proc. Linn. Soc. N. S. Wales, vi.,
1881, p. 266.

The length of the head is one-eighth of the total, or 2·3 in the distance between the gill-opening and the vent, and that between the end of the snout and the vent is 1·5 in the remaining por-

tion; the height of the body is 8·6 in the total. The eye is 3·4 in the length of the head and partially concealed by membrane; the nostril is placed close to its anterior upper margin; the mouth is small, almost horizontal and the maxilla reaches nearly to below the middle of the eye.

The dorsal fin commences, as nearly as can be ascertained, above the vent and joins the anal round the end of the tail; the anal arises at a third of the distance between the vent and the end of the caudal.

Colours.—The general colour is red with six or seven large purple spots along the middle of each side; these do not extend posteriorly beyond the origin of the anal fin, and may not be evenly disposed on both sides.

Richardson,³ in describing the gill-opening of *C. dorsalis*, writes:—"A transverse lip, which rises above the adjoining integument, and has its outer ends free, forms the posterior edge of the orifice, and appears to be capable of closing it very completely when the inflected edge of the membrane is pressed against it." This "lip" is also present in *C. rufus*; it is not a median process as might be inferred, but really a pair of organs which to my eye are nothing but rudimentary pectoral fins. They lie rather low down on the body, some distance apart, close behind, but quite free from the gill-membranes, and it is very doubtful if they have any function in connection therewith, as supposed by Richardson.

The specimen above described was forwarded by Mr. Gabriel from Port Phillip, and constitutes a record for Victoria. It is indistinguishable from examples taken in Tasmania and New South Wales, and as far as may be decided, without specimens for comparison, from Richardson's species also. The example recorded by this author from South Victoria Land (Penguin Island, 72° S. Lat.) under the name *C. aptenodytum*⁴ is placed by Dr. Günther as synonymous with *C. dorsalis* from N. W. Australia. If the species be the same, the extremes of latitude reached, furnish a remarkable instance of geographical range.

Local examples of this little eel exhibit some colour variations: some are marked as above described, others are intense carmine all over, and a few specimens are similar but mottled with lighter tints.

³ Richardson—Voy. Ereb. & Terr., 1845, p. 50, pl. xxx., fig. 1-5.

⁴ Richardson—*Loc. cit.*, p. 51.

RHOMBOSOLEA, *Günther*, 1862.

RHOMBOSOLEA FLESOIDES, *Günther*.

(Plate xxxv.).

Rhombosolea flesoides, *Günther*, Ann. Mag. Nat. Hist., (3), xi., 1863, p. 117.

Pleuronectes? victorior, *Castelnau*, Proc. Zool. Soc. Viet., i., 1872, p. 168.

Rhombosolea victorior, *Macleay*, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 133.

Flounder.

D. 66, A. 47; P. 12; V. *dex.* 6, *sin.* O.: C. 12 + 4; Sc. 72.

Length of head 3.5; depth of body 2.1, and length of caudal 4.2 in the total length. Eyes on the right side, separated by a smooth narrow space, one-fourth the diameter of the eye; the lower eye is noticeably in advance of the upper and the diameter is 4.8 in the length of the head, or but slightly less than that of the snout; the latter is produced into a fleshy process directed downwards over the mouth. The anterior nostril may be closed by a trilobed process. The hinder one lies posterior to the front edge of the lower eye and is a simple pore. The mouth is of moderate size extending to nearly below the anterior margin of the eye: it is more extensive on the blind side, and has two rows of teeth in each jaw; the nostrils have a higher and more anterior position than on the right side. Gill-rakers small, conical, and smooth, slightly fenestrated on the inner side; about thirteen in number on the lower limb, scarcely developed on the hinder one. Gills three and a half, a slit behind the last, equal to the diameter of the eye. The gill openings are small, not extending to the upper angle of the pectoral above, and closed below the preopercular angle beneath.

Fins.—The dorsal commences on the rostral process, about an eye diameter from its extremity. Though partially free anteriorly, all the rays are connected by membrane. They are highest about the middle of the fin where they form a conspicuous angle, the thirty-fifth or longest ray being 1.9 in the length of the head. The rays are continued to within an eye-diameter of the caudal rays. The ventral commences beneath the middle of the eye and is quite continuous with the anal, the apparent omission of one ray only indicating the distinction. The vent is situated on the left side contiguous to this space. The anal is similar to the dorsal the sixteenth ray being the longest. The right pectoral is

pointed above, its length being 1·5 in the length of the head: the left fin is shorter, 1·9 in the same, and is symmetrical, the central rays being the longest. The caudal is truncate or very slightly rounded, and the depth of the peduncle is 2·2 in the head.

Scales.—The forepart of the head, the interorbital space, the margins of the opercula and the bases of the pectorals are naked; the body is covered on both sides with cycloid scales, non-imbricate on the anterior portion, but overlapping behind, and upon the caudal peduncle. Fins scaleless.

The lateral line runs almost straight, there being a slight curve over the anterior half of the pectoral, which is less marked on the blind side; anteriorly, on both sides, the line is continued over the head to the base of the seventh or eighth dorsal ray.

Colours.—Uniform grey above and yellow beneath

Length 242 mm.

This species was commonly offered for sale in Melbourne, and at Queenscliff examples were taken in the seine. At the latter place a long series of pools extend between the railway and the harbour, the home of shoals of Atherines. While wading in the pools I commonly disturbed some fishes which zigzagged on the bottom, and raised small clouds of mud. I discovered these to be young flounders, from one inch to three inches in length. When disturbed they swam rapidly away as described, for two or three yards, and then usually doubled back along their tracks, so that when the mud settled it was not possible to locate them. Nearly all those caught were obtained under my feet, whence they had evidently gone for the purpose of hiding, for an old boot, bucket or other object, on being lifted, was found to harbour many young flounders.

PELTORHAMPHUS, *Günther*, 1862.

• PELTORHAMPHUS BASSENSIS, *Castelnau*, *sp.*

(Plate xxxiv.).

Rhombosolea bassensis, *Castelnau*, Proc. Zool. Soc. Vict., i., 1872, p. 167.

Sole.

D. 79; A. 54; P. *dex.* 11, *sin.* 9; V. *dex.* 7, *sin.* 4; C. 12 + 4;
Sc. 79.

Length of head 4·0; depth of body 1·74 in total length exclusive of the caudal which equals the head in length. Eyes, on the right side, separated by a flat scaly space, less than half their

diameter, which is 4·8 in the head. The length of the snout is one-fifth more than the diameter of the eye, or one-fourth the length of the head, it is produced into a fleshy process which covers the mouth anteriorly. The lower eye is slightly in advance of the upper one. Both nostrils are tubular and arise from the only naked part of the head: the anterior one has a valve-like flap behind. The mouth is small and toothless on the coloured side and is wholly in advance of the eyes and nostrils: it is large on the left side, extending far beyond the sinistral nostrils, and is furnished with several rows of movable teeth in both jaws. The nostrils occupy a slightly more dorsal position than those on the right side. Gill-rakers 11 + 2, reduced to mere knobs, the anterior ones scarcely apparent. Gills four and a half, a small slit, not more than a third the diameter of the eye, behind the last. The gill openings extend to the upper angles of the pectorals, but are arrested below by membrane beneath the middle of the eye.

Scales.—Head, with the exception of a small space round each pair of nostrils, body and fins, wholly clothed with small ctenoid scales, almost equally developed on both sides; no accessory scales.

Fins.—The dorsal fin commences at the extremity of the nasal process: the anterior rays are quite free of membrane and the tips of those following are free to above the opercular margin, the first seventeen rays are serrate behind. The highest rays occur about the middle of the fin where they are rather more than half the length of the head. The right ventral commences at the symphysis of the lower jaw and is connected by membrane with the anal. The left ventral is small having its rays close together and situated in advance of the vent. The anal is similar to the dorsal and terminates evenly with it. The pectorals are of similar length, half that of the head, but the right one has more rays and a rounded margin; in the left the ventral rays are much the longest, producing a lanceolate shaped fin. The caudal is slightly rounded, its peduncle deep, being 1·6 in the length of the head.

Colours.—Brownish grey above, white below.

Total length, 234 mm.

This is the common sole of the Melbourne markets where I obtained the specimens examined. I also netted it at Queenscliff.

Though described by Castelnau under the genus *Rhombosolea* it is clear that it cannot be there assigned; the scales are stated to be "strongly ciliated which makes the fish feel rough to the touch." Cycloid scales are a character of the genus. Though

this author writes of the dorsal and anal fins in the singular, he describes the ventrals in the plural, which tends to confirm the natural supposition that Castelnau's fish and mine are identical. The characters of this species all point to *Peltorhamphus* Günther, of which one species only *P. novæ-zealandiæ*⁵ was previously identified. The Victorian fish differs from the description of the New Zealand one, among other characters, by having the dorsal and anal rays covered with scales.

Gobiüs, *Linneus*, 1758.

Gobiüs mucosus, *Günther*.

Gobius mucosus, Günther, Proc. Zool. Soc., 1871, p. 663, pl. lxiii, fig. A.

Gobius depressus, Ramsay & Ogilby, Proc. Linn. Soc. N. S. Wales, (2), i., 1886, p. 4.

D. vi. i. 10 ; A. i. 9 ; V. i. 5 ; P. 17 ; C. 17.

Length of head 3·6 ; height of body 5·5, and length of caudal 3·0 in the total. Eyes 3·2 in the length of the head, cutting the profile and less than a diameter apart ; their diameter greater than the length of the snout. Cleft of mouth approaching the vertical, the lower jaw the longer ; the maxilla does not nearly reach the orbit. Head much depressed, the skin of which is thrown into sharp folds ; the plications on the snout are irregular, those on the cheeks vertical, a pair of transverse folds on the occiput, followed by two longitudinal ones, and another long pair on each side arising from the margins of the upper and lower jaw respectively ; the inferior aspect of each ramus of the lower jaw bears a series of about a dozen short transverse bars, resembling the teeth of a cog-wheel.

Fins.—The fourth dorsal spine is the longest, one-half the length of the head ; the anal commences evenly with the soft dorsal and terminates in advance of the posterior rays ; the pectorals attain to below the origin of the soft dorsal, and the ventrals do not reach the vent ; caudal long and pointed.

Anal papilla small, rounded.

Colours.—Yellow, marbled with brown ; under surface, as far as the vent, white. All the fins, except the ventrals, spotted with black or dark brown forming bars, longitudinally disposed on the dorsal and anal, and transversely on the pectoral and

⁵ Günther—Cat. Fish. Brit. Mus., iv., 1862, p. 461.

caudal fins. The head is devoid of scales and is deeper in tint than the body, the plications being darker still.

Günther attributed these folds to mucous, but they are distinctly dermal in nature. A comparison of the type of *G. depressus* with examples forwarded from Port Phillip by Mr. Gabriel, shows them to be identical, while there can be little doubt that they are correctly referred to *G. mucosus*, described by Günther from South Australia.

PENTAROGÉ, *Günther*, 1860.

PENTAROGÉ MARMORATA, *Cuvier & Valenciennes*, *sp.*

Apistus marmoratus, *Cuvier & Valenciennes*, *Hist. Nat. Poiss.*, iv., 1829, p. 416; *Valenciennes*, *Reg. Anim. Ill. Poiss.*, pl. xxiv., fig. 3.

Pentaroge marmorata, *Günther*, *Cat. Fish. Brit. Mus.*, ii., 1860, p. 132; *Castelnau*, *Proc. Zool. Soc. Vict.*, i., 1872, p. 82.

Cobbler.

Castelnau remarks that this fish is scarce at Melbourne, and gives its local name as "Barber." I found it to be very common at Queenscliff, where it is as well-known and as equally dreaded as the "Portesque" (*Centropogon australis*) of the Sydney fishermen. It was taken by scores in every haul of the seine and recognised under the name "Cobbler," both at Queenscliff and in the Melbourne market.

The markings appear to be very constant and remarkably well-defined; the similarity to those of the *Centropogon* mentioned, being noticeable. *Valenciennes'* figure of a Timor specimen does not well represent the species as found in Victorian waters.

CREPIDOGASTER, *Günther*, 1861.

CREPIDOGASTER SPATULA, *Günther*.

(Plate xxxvi., fig. 4).

Crepidogaster spatula, *Günther*, *Cat. Fish. Brit. Mus.*, iii., 1861, p. 508.

D. 6; A. 6; P. 26; V. i. 4; C. 12 + \times Vert. 16 + 16.

Length of head 2·6; width 3·5; height of body 5·0; width 4·7 in the total length. The snout is broad at the level of the eyes but narrows anteriorly, its length being one-third that of the head. The mouth is large extending to nearly beneath the middle of the

eye; the upper jaw, which is the longer, has a complete reflexed lip; in the lower jaw the lips do not meet at the symphysis. Teeth in both jaws very small, villiform, the anterior ones in the upper jaw forming a patch. The nostrils are near to the front margin of the eye, the anterior one bearing a small tentacle. The eye is round, 4.2 in the length of the head and little more than half the inter-orbital space, which is flat.

The head is very broad and depressed and the body is sub-cylindrical anteriorly, but compressed behind. No subcutaneous spine on the opercle, nor on the preopercle.

The distance between the end of the snout and the origin of the dorsal is nearly twice that between the latter point and the end of the caudal. The dorsal fin is very short, its base being equal to its distance from the caudal. The pectoral is broad and rounded, its length 2.5 in that of the head: the ventral is attached to its sixteenth ray. The adhesive disc is broader than long, its length half the width of the head. The distance of the vent from the disc is twice that from the anal. This fin is precisely similar to the dorsal in form and situation. The caudal is rounded, its length being equal to half that of the head, and the height of the peduncle equal to its own length.

Colours.—Colour throughout yellow, the head and body above and on the sides ornamented with crowded carmine spots, those on the head round, those on the body lengthened; the upper ones arranged transversely to form closely packed bands. Fins and lower surfaces without markings.

Total length 64 mm.

Three specimens forwarded by Mr. Gabriel, are additions to the recorded fauna of Victoria. Previously the species was known from Swan River, Western Australia. It is a well-marked form, readily distinguishable by the short and oppositely placed vertical fins, and the backward position of the vent.

DIPLOCREPIS, *Günther*, 1861.

DIPLOCREPIS PARVIPPINIS, *sp. nov.*

(Plate xxxvi., fig. 3).

D. 5; A. 5; P. 16 + \times ; C. 9.

Length of head 3.2; width 4.6; and height of body 6.1. The snout is much narrower than the head, shorter than the eye and 4.1 in the length of the head. The maxilla extends to just beyond the anterior margin of the orbit. The teeth

are conical, disposed in a patch within each jaw, and a single series of larger teeth along the sides. The nostrils lie close together in front of the eye, the anterior one bearing a tentacle. The eye is large, it cuts the upper profile and is 3·7 in the length of the head. The inter-orbital breadth is narrow, equal to the length of the eye.

Head depressed, body cylindrical.

The distance between the origin of the dorsal and the end of the caudal is 1·8 in that between the former point and the end of the snout. Both dorsal and anal fins are widely separated from the caudal: the former is slightly in advance of the anal which commences beneath its second ray. The pectoral is rounded, the middle rays being longest, 3·2 in the length of the head, the lower rays rapidly decrease in length and the ventral is attached to the sixteenth ray. The posterior sucking disc is almost circular, a little broader than long, and reaches only to beneath the middle of the pectoral: the distance of the vent from the disc is thrice that between it and the anal. The caudal is slightly rounded, its length 2·4 in that of the head; the length of the peduncle is more than twice its depth.

Colours.—In life, olive green, uniform, or with brown spots on the body, arranged as bands, or with bands fully defined which are four in number: a brown or red mark on the side of the snout through the eye to the preopercle.

Length 25 mm.

This diminutive species was first brought to my notice by Mr. A. R. McCulloch, who found it on a seaweed, identified by Mr. T. Whitelegge as *Phyllospora comosa*, Agard. It proves to be a common fish on the coast of New South Wales, and examples in the collection of the Museum were previously regarded as young specimens of another species.

DIPLOCREPIS COSTATUS, Ogilby.

Diplocrepis costatus, Ogilby, Proc. Linn. Soc. N. S. Wales, x., 1885, p. 270; Waite, Rec. Austr. Mus., v., 1904, pl. xxiv., fig. 1.

Mr. Gabriel's collection includes a single example of this species, an addition to the Victorian fauna.

DIPLOCREPIS CARDINALIS, *Ramsay, sp.*

(Plate xxxvi., fig. 1).

Gobiesox cardinalis, Ramsay, Proc. Linn. Soc. N. S. Wales, vii., 1882, p. 148.

D. 10 ; A. 7 ; P. 22 ; C. 11.

Length of head 2·7 ; width 3·0 ; height of body 5·1 ; width 4·3 in the total length. The snout is obtusely pointed, short, its length 4·0 in that of the head. The angle of the mouth is beneath the anterior fourth of the eye and is almost concealed by the overhanging preopercles. A patch of conical teeth in each jaw, the outer series the larger. The opercle is represented by a bony rod ending in a long spine, and the preopercle bears a smaller spine, both being concealed beneath the skin. Both nostrils are furnished with tentacles, of which the anterior is the larger. The eye is 5·0 in the head and equal to half the inter-orbital breadth.

The distance between the origin of the dorsal and the end of the caudal is 1·7 in that between the former point and the end of the snout. Both dorsal and anal fins lie close to the caudal but are not connected with it : the anal commences below the middle of the dorsal and has a slightly more posterior termination. The length of the pectoral is 2·7 in that of the head and the ventral is attached to its fourteenth ray. The posterior sucking disc has a free anterior margin and is much broader than long, its width being 1·4 in the breadth of the head ; it extends to beneath the end of the pectoral. The vent is nearer to the disc than to the anal, the relative distance being as 3 to 5. The caudal is subtruncate, its length a little more than half that of the head.

Colours.—The life colours are not known. In fluid, all examples are uniform yellow.

Length 70 mm.

Three specimens from near Launceston, Tasmania, collected in 1879, by Mr. K. Broadbent, and three from Ulverstone, Tasmania, forwarded by the Curator of the Victoria Museum, Launceston, in 1903. One of the former batch is very possibly the type of the species, but the characters above given are derived from one of the more recent acquisitions. The somewhat shrivelled condition of the author's specimens, if such they be, may account for the differences noted. In the first place the structure of the posterior sucking disc is not that of *Gobiesox*, and the number of dorsal and anal rays is understated. Otherwise the specimens agree well with the description and I have no hesitation whatever in

assigning them to this species: the opercular spine is characteristic, as is also the presence of tentacles on both nostrils. The word "compressed" in the description of the head is an obvious error.

The four known species of *Diplocrepis* may be recognised by the following characters:—

DIPLOCREPIS PUNICEUS, *Richardson, sp.*

Lepidogaster puniceus, Richardson, Voy. Ereb. & Terr., 1846, p. 71, pl. xliii., fig. 1-7.

D. 11; A. 5. The anal fin commences behind the middle of the dorsal; the vent is placed close to the sucking disc, at a great distance from the anal.

Hab.—New Zealand.

DIPLOCREPIS CARDINALIS, *Ramsay, sp.*

Gobiox cardinalis, Ramsay, Proc. Linn. Soc., N. S. Wales, vii., 1882 p. 148.

Diplocrepis cardinalis, Waite, *antea*, p. 204, pl. xxxvi., fig. 1

D. 10; A. 7. The anal fin commences below the middle of the dorsal; the vent is placed somewhat nearer to the sucking disc than to the anal.

Loc.—Ulverstone, Tasmania.

DIPLOCREPIS COSTATUS, *Ogilby.*

Diplocrepis costatus, Ogilby, Proc. Linn. Soc. N. S. Wales, x., 1885, p. 270; Waite, Rec. Austr. Mus., v., 1904, pl. xxiv., fig. 1.

D. 8; A. 7. The anal fin commences slightly behind the origin of the dorsal; both are close to the caudal. The vent is placed much nearer to the anal than to the sucking disc.

Hab.—N. S. Wales, Lord Howe Island, Victoria.

DIPLOCREPIS PARVIPINNIS, *Waite.*

Diplocrepis parvipinnis, Waite, *antea*, p. 202, pl. xxxvi., fig. 3.

D. 5; A. 5. The anal commences beneath the second dorsal ray, and both are far removed from the caudal; the vent is placed much nearer to the anal than to the sucking disc.

Hab.—N. S. Wales.

BLENNIUS, *Linnaeus*, 1758.

BLENNIUS TASMANIANUS, *Richardson.*

(Plate xxxvi., fig. 5).

Blennius tasmanianus, Richardson, Proc. Zool. Soc., 1839, p. 99; Trans. Zool. Soc., iii., 1849, p. 129.

D. xii. 18; A. 20; P. 14; V. 2; C. 7 + 6.

Length of head 3·7; height of body 3·8; and length of the caudal 4·8 in the length of the fish. Eyes large, cutting the pro-

file less than half a diameter apart, 3.1 in the length of the head and a little longer than the snout. Orbital tentacles not longer than the depth of the eye, simple and fringed behind. Small pores occur around the eye and on the preopercular margin. The maxilla extends to beneath the centre of the eye. The teeth are as is usual in the genus with posterior canines.

Fins.—The dorsal fin commences behind the vertical of the preopercle; the first spine is a little shorter than the eye, the 4-7 spines are equal, and slightly longer than the diameter of the eye, and the last spine is the shortest, half the length of the first ray; the 3-12 rays are equal, twice the length of the first spine, which latter is about the same height as the last ray. The base of the soft is one-seventh longer than that of the spinous portion; the anterior anal rays are only one-half the height of the median dorsal ones, they increase slightly in height posteriorly. The pectoral is pointed, the ninth and longest ray being nearly equal to the head in length, extends to the anal fin. The inner ventral ray is half the length of the head. The caudal is sub-truncate and the least depth of its peduncle is one-third the length of the head. The lateral line is composed of about twenty-four tubes of which seventeen form an arch over the pectoral; the others, which are less defined and more widely spaced, are horizontally disposed; there are no pores on the posterior half of the body.

Colour.—The ground colour is olive, darker above than below; the head is marked with three obliquely vertical bars, of which the first passes through the eye and forms a \vee with its fellow on the throat, the second diverges from the first below the eye backwards to the edge of the gill membrane, and the third occurs behind the preopercle; the body is marked with nine transverse bars formed each of two series of black spots, which do not attain the lower surface. There is a black spot between the first two dorsal spines, and the base of the fin is shaded in accord with the body bars; the anal bears a dark sub-marginal band. There are no markings on the other fins.

Total length 47 mm.

The single specimen examined was dredged by Mr. Gabriel in Western Port. It is the one illustrated, and is a half-grown example. Specimens of this age differ from the adults by the shorter orbital tentacle, the much longer and pointed pectoral fin, the simple anal papilla, and the much larger eye, in addition to constant markings which do not appear to be maintained to adult age.

Mr. A. M. Lea, Government Entomologist, Tasmania, has forwarded to the Trustees a nice series of this species. I am not

aware of the colours of the adult during life : preserved examples undergo peculiar changes similar to members of the Kyphosidae : these are usually manifested as large irregular blotches of black or brown on a pale yellow ground. The markings are adventitious, not alike in two fishes, and both sides of the same specimen are usually quite dissimilar.

OPHIOCLINUS, *Castelnau*, 1873.

OPHIOCLINUS GRACILIS, *sp. nov.*

(Plate xxxvi., fig. 6).

D. xliii. + 1 ; A. iii. 29 ; P. 13 ; V. 2 ; C. 11 + 4 ; Vert.
19 + 32 = 51.

Length of head 4·9 ; height of body at the anal fin 7·4 ; length of caudal 9·0 in the total. The diameter of the eye is one-fifth the length of the head, equal to the interorbital space, and three-fourths the length of the snout. The anterior nostril is in a short tube, a little nearer to the end of the snout than to the eye : the posterior nostril is one of numerous large pores, disposed on the snout, around the eye, on the occiput, preopercle, and lower jaw.

Teeth.—A patch of conical teeth within each jaw, and a narrow band on each side ; teeth on the vomer, none on the palatines.

Fins.—The dorsal commences in advance of the operculum, the first spine is two-thirds the diameter of the eye and the fin increases in height backwards, the single ray being twice the length of the first spine and joined to the caudal. The anal fin commences below the seventeenth dorsal spine and is formed of three short spines, followed by longer rays which are slightly longer than the corresponding dorsal spines. The pectoral is rounded, about one-half the length of the head and somewhat shorter than the inner ventral ray. The caudal is truncate, the depth of its peduncle more than one-third the height of the body.

Scales.—Head naked, body covered with small non-imbricate scales (not shown in the illustration). The lateral line commences beneath the first dorsal spine ; it is strongly arched and is not continued beyond the end of the pectoral : a median depression to the caudal may be traced in some examples, but this is apparently not a true "lateral line."

Colours.—The general colour is brown above and yellowish beneath, but great variations occur. The illustration represents

a specimen in which the markings are very well defined and such consist of a longitudinal black band which passes from the snout, through the eye to the tail : it deepens posteriorly and embraces the body and caudal peduncle and is also continued in blotches on to the dorsal and anal fins. The top of the head and the back including the fin is white. In other examples the band is brown, sometimes very faint, and the vertical fins may be of the same tint ; when the head-band is pale in colour it may have a black lower margin ; the extension of the band posteriorly may be indicated by some spots on the side of the tail. The pectorals are generally and the ventrals always white, and if the vertical fins are coloured they have a light margin.

Of many specimens examined, the largest measured 57 mm. in length. This species has been taken at various times in rock pools at Long Bay, near Sydney, by Mr. A. R. McCulloch.

OPIHOCLINUS GABRIELI, sp. nov.

(Plate xxxvi., fig. 7).

D. li. + 1 ; A. 36 ; P. 12 ; V. 2 ; C. 11 + 4 ; Vert. 21 + 39 = 60.

Length of head 5.3 ; height of body, at the origin of the anal, 7.5 ; length of caudal 8.0 in the total. Eye prominent, large, close to the upper profile, 4.2 in the length of the head, and twice the interorbital space. Length of snout little more than half the diameter of the eye and bearing two short tentacles, immediately above the upper lip. The maxilla reaches to beneath the third fourth of the eye.

Teeth.—An extensive patch of small granular teeth within the margin of each jaw, followed by a narrow band on each side ; teeth on the vomer but none on the palatines. A broad frenum in the upper jaw.

Fins.—The dorsal commences above the opercle, but its origin is not well defined, and is composed wholly of spines with the exception of one ray, the last, which is joined to the caudal : the fin rises rapidly to the fourth spine and thence is of fairly uniform height, the spines lengthening somewhat posteriorly ; the median height of the fin is about one-third that of the body at the commencement of the anal.

The anal fin arises beneath the nineteenth or twentieth dorsal spine and is formed wholly of soft rays ; it is similar to, but slightly higher than the dorsal and is joined to the caudal. The pectoral is short and rounded, its middle rays 2.4 in the length of the head. The ventrals are jugular in position, close together

and formed, each of two stout rays, the inner being the longer, a little more than half the length of the head. The caudal is rounded, and the depth of its peduncle 2.5 times in the height of the body.

Scales.—The scales are scarcely apparent, they are deeply imbedded, small and widely separated anteriorly, larger and closer together posteriorly. The head is naked but bears a number of large pores, especially developed on the snout, around the eyes, and within the margin of the preopercle. The lateral line is developed anteriorly only, and is placed above the pectoral but does not extend as far as the margin of the fin.

Colours.—The general colour is brown, lighter beneath. A dark band passes through the eye to the preopercle which latter has no defined edge, being included in the common covering of the head. The lower and posterior portions of the body bear some light marbled markings, which extend on to the anal and caudal fins; the other fins are without markings.

Three examples were dredged by Mr. Gabriel, the largest of which measures 102 mm. in length. They are fully adult, the two females carrying young. These can be distinctly seen through the abdominal integument and in one individual numbered thirty-six, each being 12 mm. long.

The genus *Ophioclinus* was defined by Castelnau⁷ in 1873, with *O. antarcticus* as the type species. In 1894 Ogilby⁸ described a fish from Queensland under the name *O. devisi* and remarked that "the neglect of Castelnau to even mention the pectorals is negative evidence as to their existence in his genus." In his generic definition Castelnau distinctly refers to the pectorals as follows:—"Ventral fins inserted in front of the pectorals," and again in his specific description:—"pectorals much shorter than the ventrals, of ten rays." I have examined the type of *O. devisi* and find that pectorals are not present, and it follows therefore that it cannot enter *Ophioclinus* and may tentatively be regarded as the type of *Scleropteryx*, a name proposed by De Vis, but which apparently never reached beyond the manuscript stage. Ogilby's definition of *Ophioclinus* will therefore apply to *Scleropteryx*, and not to Castelnau's genus.

O. gabrieli differs from *O. antarcticus* by having two instead of three ventral rays, and by the smaller number of spines and rays in the dorsal and anal fin respectively.

⁷ Castelnau—Proc. Zool. Soc. Vict., ii, 1873, p. 69.

⁸ Ogilby—Proc. Linn. Soc. N. S. Wales, (2), ix., 1894, p. 373.

PSEUDOMONACANTHUS, *Bleeker*, 1866.PSEUDOMONACANTHUS GRANULATUS, *Shaw*, *sp.*

Balistes granulata, Shaw, in White's Voy. N.S. Wales, 1790, p. 295, pl. (p. 254), fig. 2.

This is another species whose existence in Victorian waters is regarded by Mr. A. H. S. Lucas as doubtful, no one having, apparently, identified it since Klunzinger first recorded it from Port Phillip. I obtained specimens in the Melbourne Fish Market.

SPHEROIDES, *Dumeril*, 1806.SPHEROIDES RICHEI, *Fréminville*, *sp.*

Tetraodon richei, Fréminville, Nouv. Bull. Philom., ii., p. 250, pl. iv., fig. 2.

This species is included in the Victorian fauna, apparently only on the authority of Klunzinger.⁹ I found it to be not uncommon at Queenscliff where it was taken by means of the seine net.

Castelnau "observed two sorts [of *Tetrodon*] on the shores of Hobson's Bay," namely:—*T. hamiltoni*, Richardson, and *T. hispidus*, Linnaeus. It is quite evident however, from his description, that the species recorded under the latter name is really referable to *S. richei*, and that in all probability *T. hispidus* does not occur in Hobson's Bay. *S. hamiltoni* was found to be extremely common, and appears to attain larger dimensions than in Port Jackson.

⁹ Klunzinger — Sitz. Ak. Wiss. Wien., lxxx., 1879, p. 425.